Remarks: General Overview of Claims Amendments

Applicant's Claims have been amended to comply with Examiner's recommendations and criticisms. In particular, Claim 20 is amended to conform with requirement for language consistency. Claim 21 has been amended to recite a step where maps are specifically generated and displayed in a way that includes Applicant's designated equations, formulas, and modalities.

The Question of Unobviousness: On page 9 of the office action Summary (mailed 09/06/20006) the Examiner states, "…the Examiner considers the possibility that the general form on any and or all of the specific components may possibly be inherent or anticipated by any number of references regarding mapping in each individual are area for each individual component."

Because the Examiner does not, in the office action Summary (mailed 09/06/20006)in provide references of prior art, it is impossible for the Applicant to formulate a detailed response to the possible issue raised here. However, a general response is offered.

In previous comments regarding unobviousness, the Examiner has cited the contents of Table 1 20 as well as the five characteristics of domain boundaries.

To the knowledge of the Applicant, Table 1 20 shows for the first time in any scientific or philosophical literature prior art, the commonalities among equations of such diverse physical realities, because the references reflect mutually exclusive interests of the respective scientific disciplines. Additionally, on hindsight, it may *seem* obvious—once the content of the Table has been presented—the fact that their relationships have not been presented before is evidence of their unobviousness.

The same is true for the Applicant's inclusion of the five characteristics of domain boundaries (also cited by the examiner on page 9). While there is possibly

a discussion of some of these characteristics in scientific literature concerned with soap bubbles—due to the fact that packed bubble surfaces may, in a restrictive sense, seem to represent domain boundaries themselves—the discussion of the five characteristics presented by the applicant are an unrecognized problem in other branches of science. The reason for this is that scientific literature is primarily concerned *only* with the interactions among diverse *entities*, not with the interactions among domain boundaries of spaces as explored in the Applicant's Specifications. The five characteristics are unobviousness because they are unrecognized problems and, therefore, militate in favor of patentability of the mapping system of the application.

In addition, the patent application was published on 30 June, 2005, and has received—to the applicant's knowledge—no adverse responses from the public. Since many persons review published applications and since the patent application has a broad importance, the fact that no complaints and/or corrections as to content have been directed to the inventor (and presumably to the patent office) is a significant element in the efficacy of the patent application.

Rejection of Claims 8-14 under 35 U.S.C. 102(b)

The Broad Issue

The focus of Hattori is exclusively on the relationship between an emitting (thermal, light, etc.) source and a room and/or surfaces in a room.

Claim 1 in Hattori states: "An apparatus for analyzing energy distribution in a room using a model of an energy system to be installed in the room, said energy system having an energy source, said room having at least one desired three dimensional object therein and being defined by three dimensional coordinates,

said apparatus comprising:…" Claim 1 restricts Hattori to an "apparatus" in a "room" and is, therefore, a claim for an invention having completely different characteristics than the Applicant's invention. Hattori does not anticipate the Applicant's invention, since it is concerned with different subject matter. The Applicant's invention solves a different problem. The Hattori invention, even though it uses some of the same words—such as "boundary"—the words are used in a different sense than used in the Applicants invention.

Specific Rejections under Section 102.

In addition, the calculations and/or means specified in Hattori do not anticipate the applicant's invention. A review of the specific rejections by the Examiner follow:

Fig 2 in Hattori shows flow chart feedback loops for calculating angles, etc., that are already known/given quantities in the applicant's invention. (See page 33 of applicant's Specification.)

Col.3, lines 32-50 in Hattori is also concerned with calculating angles, etc. that are known quantities in the applicant's invention.

Col. 3, lines 51-65 in Hattori is also concerned with calculating angles, etc. that are known quantities in the applicant's invention.

Col. 9, lines 49-64 in Hattori is concerned with a means for calculating distances between a single thermal source and surfaces in a room. This means gives information that is restricted to *only* a single thermal-light source and furniture/ walls in a room, and do not anticipate the applicant's invention

Col. 4, lines.25-39 and Col. 4, line 40 in Hattori is also concerned with a means for calculating *only* distances between a single thermal source and surfaces in a room. This means gives information that is restricted only to a single source and do not anticipate the applicant's invention

Col. 5, line 26 in Hattori refers to a "display control part" for showing *only* distances between a single thermal source and surfaces in a room. This gives information that is restricted only to a single source and do not anticipate the applicant's invention.

Col. 7, lines 32-44 in Hattori, as with all of the above references, refers only to angles and distances between a single thermal source and surfaces in a room. This

gives information that is restricted only to a single source and do not anticipate the applicant's invention.

Applicant's invention is able to generate the maps of the spaces, events, platens, domain boundaries or domains that distinguish over Hattori under Section 102 for the following reasons:

First, the Hattori patent uses the Monte Carlo Method to achieve its goals of an apparatus for more speedily and efficiently calculating "geometrical view factor." The Monte Carlo Method is defined in the fourth edition of Van Nostrand's <u>Scientific Encyclopedia</u> in these words: "The term Monte Carlo Method is applied rather indiscriminately to any method of calculation involving random sampling. It usually implies that the sampling is being carried out automatically on a digital computer. It is rarely efficient for problems that cannot be formulated naturally in probabilistic terms."

While the random sampling probabilistic nature of the Monte Carlo Method works well for determining "geometrical view factor" in Hattori, the mathematical tool is useless in the applicant's invention, because probabilistic data will only give false results for creating maps as specified in applicants's invention.

The applicant's invention requires specific details of size, mass, etc of events in order to determine platens, domains, and domain boundaries between many pairs of events. Applicant's invention cites specific equations **20** (page 39) as examples of appropriate kinds of mathematical rules to determine the geometric mapping of events and space. These equations require mass, size, etc. in order to be useful in the applicant's invention, whereas none of this information is used in Hattori. Also, angles among masses, etc. are givens and already known and specified in applicant's invention (page 33), whereas Hattori calculates angles, etc., in order to determine "geometrical view factor".

In Hattori, the probabilistic nature of thermal radiation requires the mathematical tool of calculus integration to be used. Integration techniques of this kind generate average thermal characteristics and cannot deliver the specific geometries that applicant's invention requires. The reverse is also true: The specific nature of the mathematics used in applicant's invention would create so much data—and so slowly—as to be completely useless to Hattori.

Second, the Hattori patent is for a single apparatus that records a specific kind of energy (temperature) in a single space (room). Hattori calculates a statistical thermal relationship *solely* between a thermal source and surfaces in a room. Through feedback loops in the apparatus (Fig. 2) a picture, of sorts, of the temperature gradients in a room can be determined, such that efficient use of heating energy can be obtained. The apparatus in Hattori can be described as a kind of a camera for heat gradients that exist in a space, as viewed from a single apparatus located somewhere within that space.

The information transmitted to the Hattori apparatus from what can be considered as statistical averages of what can be termed "heat atom events" in the

space in the room are considered only in relation to the apparatus. For this reason, Hattori takes into consideration *only* the relationship between "heat atom events" and the apparatus itself. Hattori cannot take into consideration relationships between and among either pairs or groups of "heat atom events" themselves. Thus Hattori cannot, either as an apparatus or method, create a map or maps depicting the kind of relationships described in the applicant's invention. The feedback loops in Hattori exist solely between "heat atoms events" and the singular apparatus.

It is a unique feature of applicant's invention that the method results in map displays of relationships between and among events themselves and not between events and a singular apparatus, as specified in Hattori. This is why the flow chart in applicant's invention (Fig 2) shows, at the top, that a decision needs to be made as to which pairs of events are the focus of the steps that follow in the flow chart. In addition, applicant's Fig 2 shows the possible feedback loops between every major addition of a new event and its possible relationship with other events in its neighborhood. These feedback loops make it possible to call out entirely different pairs of events upon which do determine platens and platen boundaries using the sample equations in **20**. In Hattori, no such decisions are possible because the feedback loops in Hattori all exist solely to feed statistically averaged thermal data to the apparatus. In other words, in Hattori there exists only a direct link between a single "heat atom event" and the apparatus. Hattori cannot establish a link between two "heat atom events" themselves. This is the great difference between Hattori and applicant's invention.

These Distinctions are submitted to be of patentable merit under Section 103:

The cited reference, Hattori, is from a different field than the applicant's invention. This factor weighs against its use in a rejection. *In re Oetiker*, 24 USPQ 2d 1443 (Fed. Cir.1992). The Hattori patent uses a *statistical methodology* generally termed the Monte Carlo Method to achieve its goals of an apparatus for more speedily and efficiently calculating "geometrical view factor" in the field of thermal, light, etc. regulation in a room. Statical methods in Hattori cannot be applied to the applicant's invention, because they would give incorrect data for maps of the applicant's invention.

The applicant's invention solves a different problem than is specified in Hattori, and such different problem is recited in the applicant's claims. *In Wright*, 6, USPQ 2d 1949 (1998). The Hattori patent is for an "apparatus for calculating geometrical view factor". The apparatus calculates zenithal angles, horizontal angles, emission intensities, arrival surfaces, etc., in order to determine an *average* statistical thermal relationship (geometrical view factor) between a *single* thermal source and various surfaces (walls, furniture) in an enclosed space (room) (col. 3, lines32-50 and col.3, lines 51-65).

The applicant's invention uses *specific* known angles, etc. between and among *multiple pairs* of events (masses, entities, etc.) to determine a completely different set of mapping concerns (Platens, domains, domain boundaries, etc) than Hattori. If Hattori had anticipated applicant's patent, either as an apparatus or as a method, then the Hattori patent would enable anyone versed in the art to create a map or maps as specified and claimed in the applicant's invention. Because Hattori uses statistical averages and is concerned only with direct relationships between a thermal source and contents of a room, it is impossible for Hattori to accomplish

this. Applicant's invention has capabilities and concerns that are beyond the capabilities of Hattori.

Unsuggested Modification: Hattori lacks any suggestion that it could be modified in a manner required to meet the applicant's claims.

Once again, the Applicant's patent application was published on 30 June, 2005, and has received—to the applicant's knowledge—no adverse responses from the public. Since many persons review published applications and since the patent application has a broad importance, the fact that no complaints and/or corrections as to content have been directed to the inventor (and presumably to the patent office) is a significant element in the efficacy of the patent application.

Conclusion:

Therefore applicant submits that (currently amended) Claims 15-21 are allowable over the cited reference (Hattori) and solicits reconsideration and allowance.

The applicant submits that the dependent claims 16-21 are patentable for the same reasons given with respect to the parent Claim 15. Claims 16-21 set clear limitations on the process by which platens, domains and domain boundaries between and among *any* entity-event pairs are determined, whereas Hattori presents no suggestion that show these relationships are possible with the Hattori invention. Again, the only relationships that concern Hattori are those between a thermal source and entities in a room.

Since Claims 15-21 define novel structure that produces new and unexpected results as described above, applicant submits that such claims are clearly patentable.

Conditional Request for Constructive Assistance

Applicant has amended the claims of this application so that they are proper, definite, and define novel structure which is also unobvious.

If, for any reason this application is not believed to be in full condition for allowance, applicant respectfully requests the constructive assistance and suggestions of the Examiner pursuant to M.P.E.P. #2173.02 and #707.07 in order that the undersigned can place this application in allowable condition as soon as possible and without the need for further proceedings. In this regard, applicant includes "Request Under MPEP 707.07(j)" as part of this Amendment B.

Respectfully,.

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Date _1/11/2007_ Inventors Signature